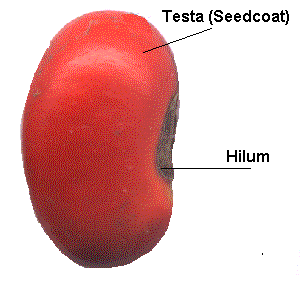
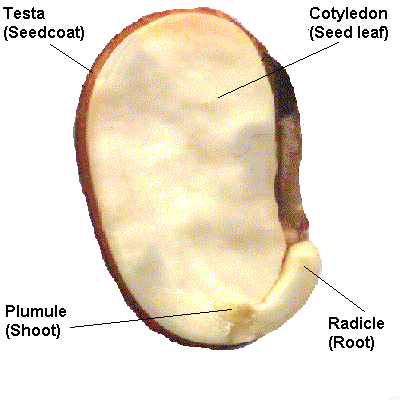
**PLANT PARTS YOU WILL LOOK FOR**

**HILIUM-** a small scar where the seed was attached to the parent plant

**MICROPYLE-** a small pore or hole near the hilium through which the pollen tube grew before the egg within the ovule was fertilized.

**TESTA-** The seed coating which protects the plant embryo and reduces the evaporation of water from the plant;

** **COTYLEDONS**- the first seed leaves that serve as food storage organs for the embryo. They are attached just below the embryo shoot or PLUMULES- leafy structures that will become the plants first true leaves;

**EPICOTYL**- contains the PLUMULES at the upper end. The lower end will become part of the stem;

**HYPOCOTYL**- the tougher, thicker part of the embryo. The lower end (the RADICLE) will become the root. The upper end will become part of the stem along with the lower end of the epicotyl.

**PRELAB QUESTIONS:**

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| 1. *Where do you find seeds in the plant?* |
| 1. *What shape are they?* |
| 1. *What is the purpose of seeds?* |
| 1. *How big are seeds?* |
| 1. *What is inside of a seed?* |

**Step by Step lab/ discussion:**

1. Take a bean, pea, and corn seed out of the dry-bean bag.
2. Using eye-loupes, observe the seeds closely.
3. Draw what you see using colored pencils for details. Use descriptive language to describe what you see.

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| *Why do seeds dry up, stay in their seed shape and not fall apart?* |

1. Take an imbibed bean, pea, and corn seed out of cups.
2. Using eye-loupes, observe the seeds closely.
3. Draw what you see using colored pencils for details. Use descriptive language to describe what you see

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| *Write down differences between the dry and wet seeds and new details they notice about the imbibed seed.* |

1. Begin dissection.
2. Carefully remove the softened seed coat from an imbibed bean or pea seed(NOT corn).
3. Record the color, texture and function of the seed coat.
4. Have students begin a drawing a label it with TESTA, the MICROPYLE and HILIUM.
5. Slide your fingernails into the seam on the convex(rounded) side of the seam and separate the two large COTYLEDONS.
6. YOu should be able to see the tiny plant embryo and its parts- the EPICOTYL, HYPOCOTYL, PLUMULE, and RADICLE. Observe these, draw and label them.

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| W*hat do you think the function of each part is or what the part will become in the adult plant.* |

1. Take an imbibed corn seed from the cup.
2. Using the forceps or tweezers peel the TESTA from the seed.
3. Look at the flat, wide side of the seed.
4. Describe the structures they see.
5. Match any of the structures of the previous seeds to those of the corn seed.

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| *What do you notice about the number of cotyledon in corn?* |

1. use the scalpel or sharp knife to cut the corn seed in half along the seem. If you turn the seed 90 you should be able to see the internal structures. Draw and label your dissected corn seed.

**CLEAN UP ALL OF YOUR MATERIALS AND WIPE DOWN YOUR LAB TABLE**

**Review questions:**

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| 1. *What did you learn about the differences between bean and corn seeds?* |
| 1. *What is the function of the testa?* |
| 1. *What is the shape and function of the cotyledons in beans?* |
| 1. *Why does a corn seed have an endosperm and a bean not?* |
| 1. *What will become the plant’s first true leaves?* |
| 1. *What does the radicle become?* |
| 1. *Why does the lima bean have a micropyle?* |

Dry seed observations: Imbibed seed observations:

Dissected bean seed observations: Dissected Corn Seed Observations: